

## ABSTRACT OF THE DISCLOSURE

An optical transmission system capable of transmitting with high quality all the component signals of a signal lightwave having a broad total wavelength band and particularly suitable for the CWDM optical transmission, and an optical multiplexer and an optical demultiplexer for the system. Component signals outputted from optical transmitters are combined by an optical multiplexer, travel over an optical fiber transmission line, and arrive at an optical demultiplexer to be separated. They are received by optical receivers. The total transmission loss in the transmission line is smaller at wavelength  $\lambda_b$  than at wavelength  $\lambda_a$ . The insertion loss of the optical multiplexer or the optical receiver is larger at wavelength  $\lambda_b$  than at wavelength  $\lambda_a$ . The difference in power between the component signals having wavelengths  $\lambda_a$  and  $\lambda_b$  arriving at the optical receivers is smaller than the difference in the total transmission loss in the transmission line between wavelengths  $\lambda_a$  and  $\lambda_b$ .